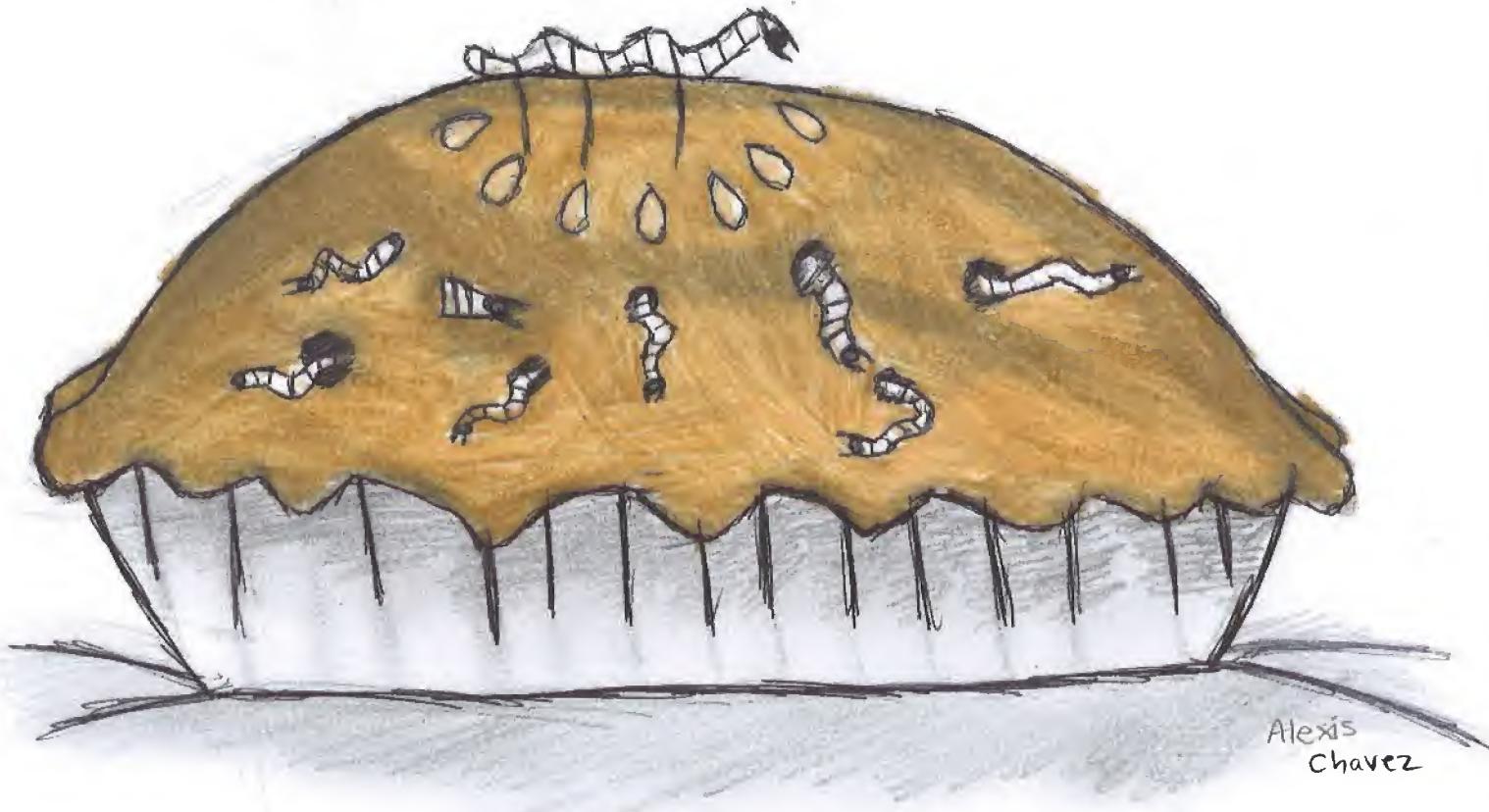


The Mealworm Cookbook



Recipes and Illustrations by Mrs. Delia Ayala's 6th grade
science students

Curren School, Oxnard CA





This book was written and illustrated by students from Mrs. Delia Ayala's 6th grade science classes as part of the California State University Channel Islands Junior Scientist Project, in collaboration with Oxnard School District, the Ventura County STEM Network and the Amgen Foundation.

About the Project:

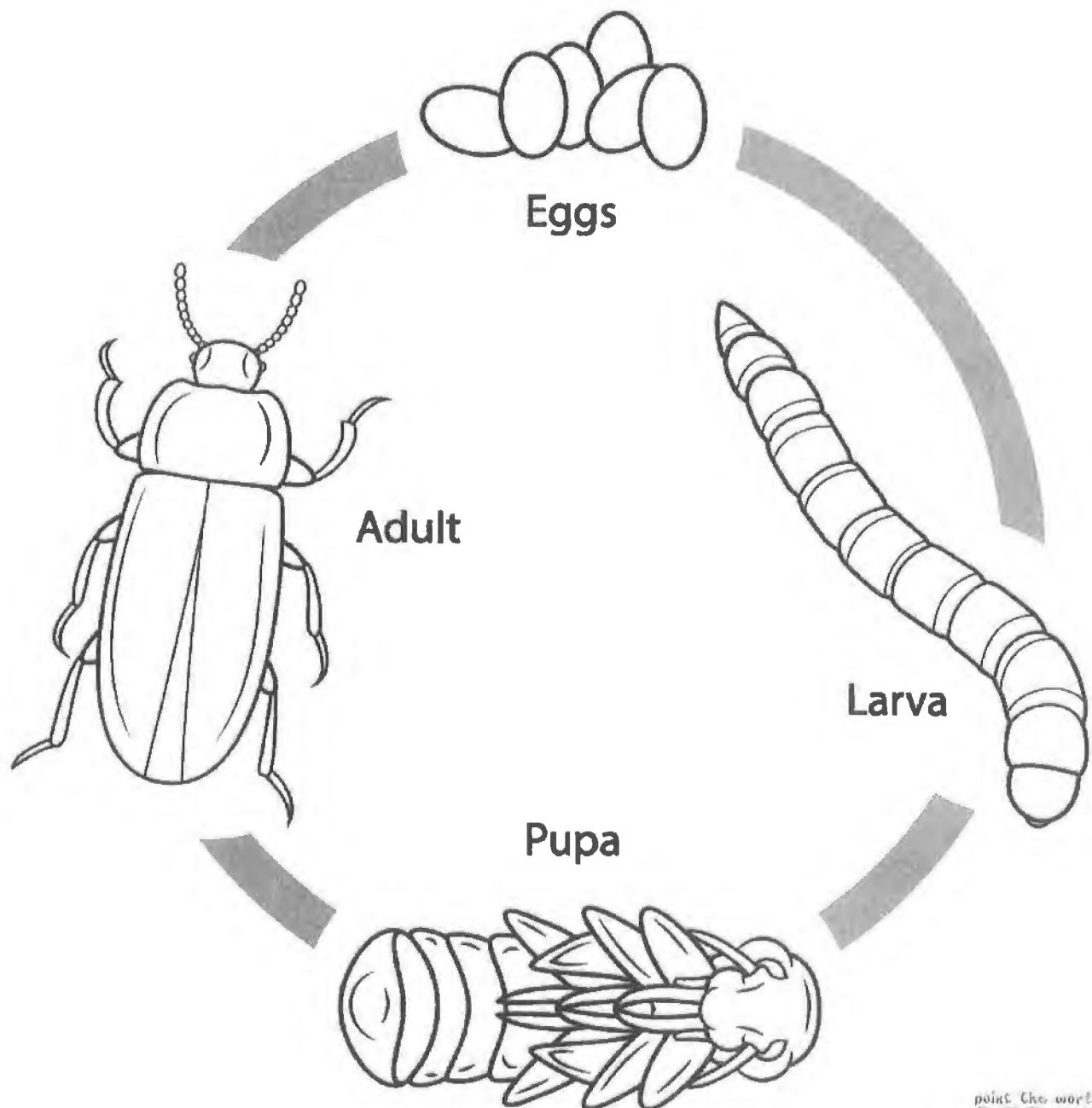
6th grade students in Mrs. Ayala's classroom at Curren School learned about edible insects as a sustainable food source by raising mealworms in their classroom. Under the guidance of CSUCI student Angelica Morales-Moraga and Professor Ruben Alarcon, the Curren students asked questions, then designed and conducted experiments with the mealworms. The experiments included:

- Raising mealworms in varying temperatures to see how it would affect the mealworms' growth (related to climate change).
- Testing different water sources (such as pumpkins and grapes) to see how it would affect the mealworms' growth.

As part of the project, students measured and weighed the insects regularly, and recorded their data. At the end of the project, the students analyzed their results and presented their findings. The project also included a mealworm tasting.

A special thank you to Mrs. Delia Ayala; the 6th grade science students at Curren School; CSUCI Professor Phil Hampton; CSUCI Professor Ruben Alarcon; CSUCI student Angelica Morales-Moraga; CSUCI; Oxnard School District; Curren School; the Ventura County STEM Network; and the Amgen Foundation for making this project possible.

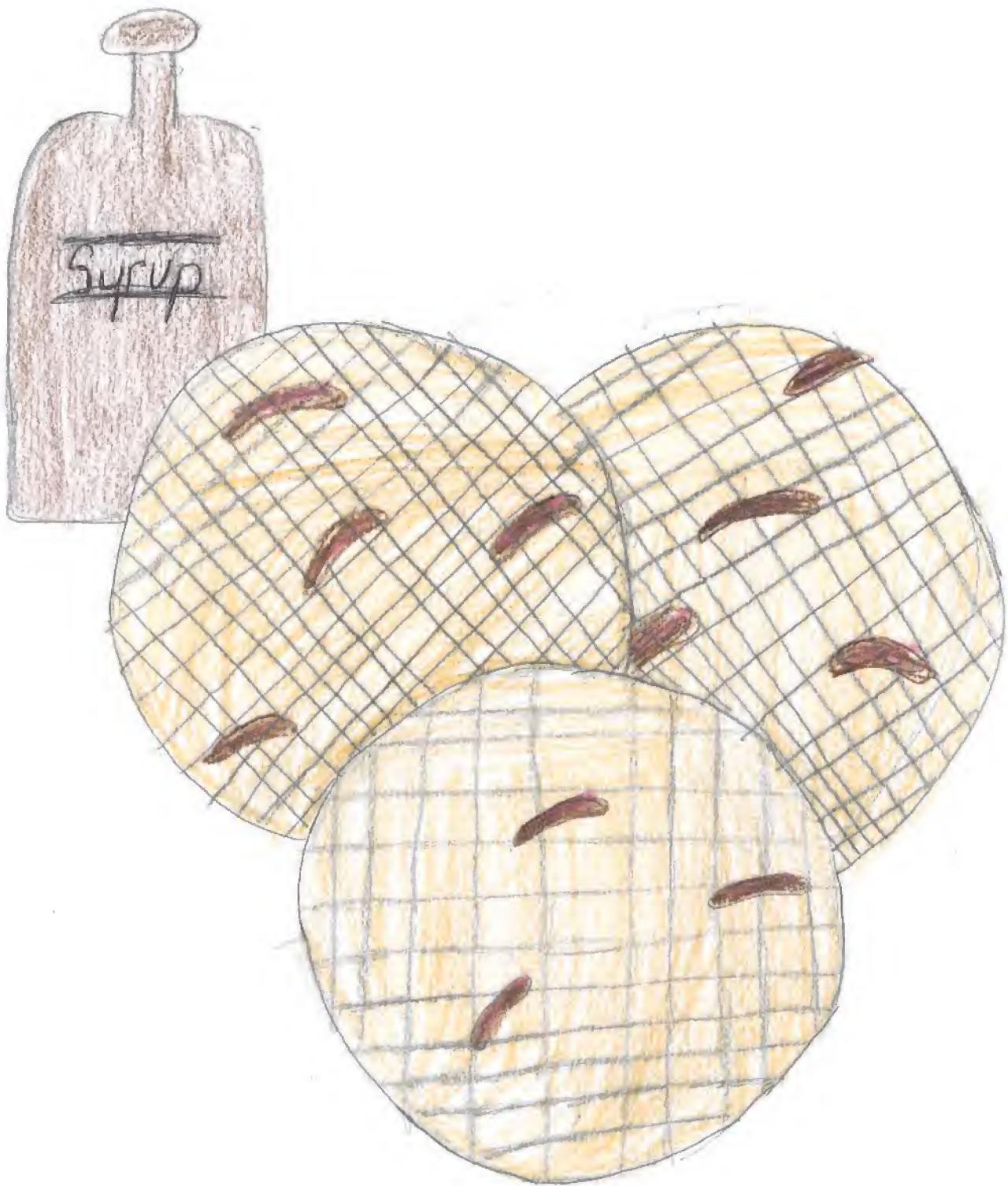
Life Cycle of a Mealworm





Breakfast

Xiffali
Ramirez



RECIPE:

Waffles w/ mealworms

FROM:

Xitlali Ramirez



INGREDIENTS:

2 eggs

1 tablespoon white sugar

2 cups all-purpose flour

4 teaspoons baking powder

1 3/4 cups of milk

1/4 teaspoon salt

1/2 cup vegetable oil

1/2 teaspoon vanilla

extract

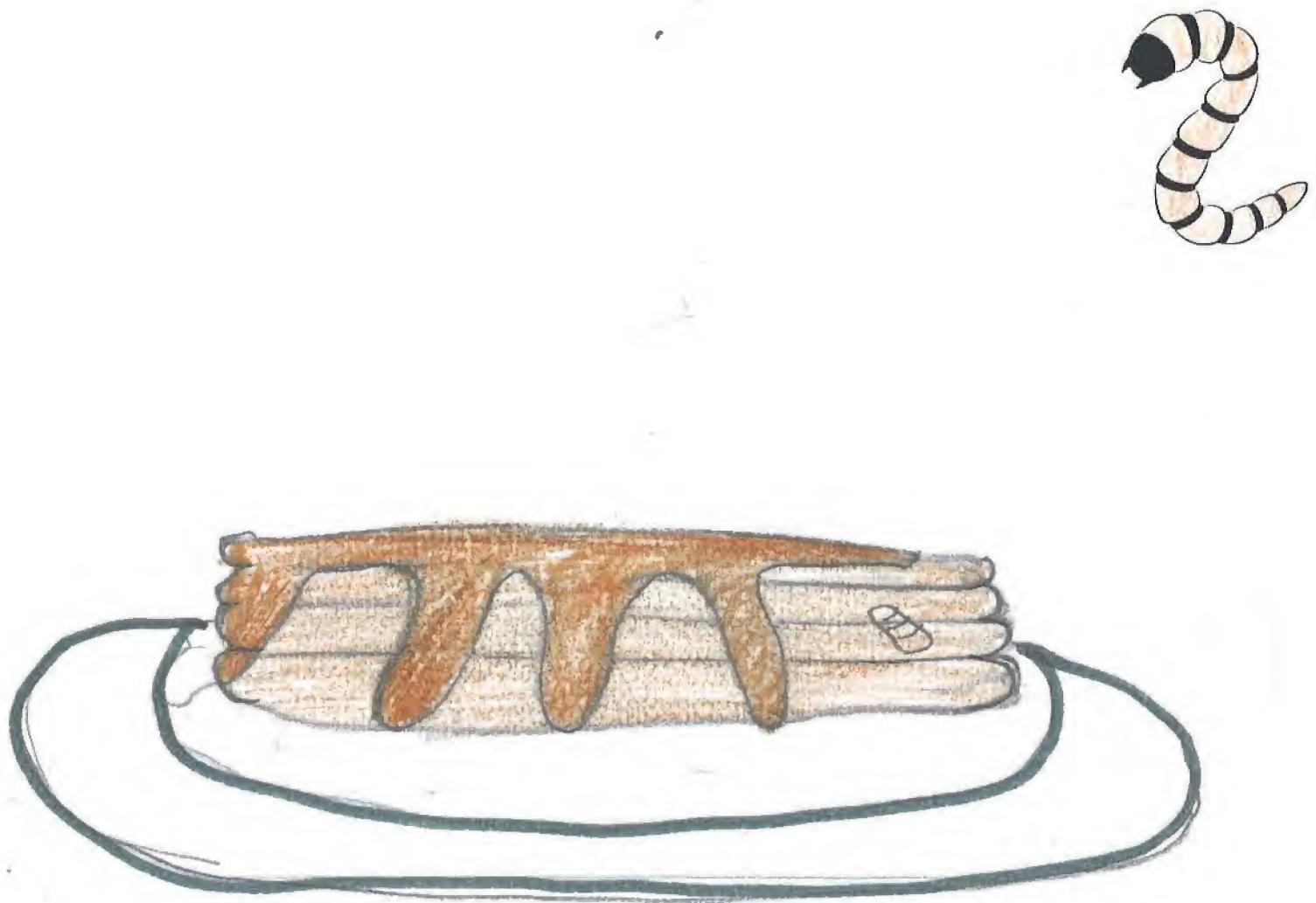
DIRECTIONS:

Preheat the waffle iron.

Beat the eggs in a large bowl with a hand beater until it's fluffy. Beat in the flour, baking powder, salt and vanilla, just until smooth. Spray preheat waffle iron with non-stick cooking spray. Pour mix onto hot waffle iron. Add the mealworms

Cook until it's golden
brown. Serve hot.





RECIPE:

Pancakes

FROM:

Toni Simpson



INGREDIENTS:

1 1/4 cup of water

1 1/4 cup flour

2 table spoon sugar

1/2 teaspoons baking powder

1/2 tsps of salt

1/2 lbs oil

DIRECTIONS:

Sift flour, sugar, baking powder, and salt. Whisk the water and oil together in a small bowl. Make a well in the center of dry ingredients; pour in wet ingredients. Stir until blended. Heat a lightly oiled griddle over medium-high heat. Drop batter by large spoonfuls onto griddle and cook until bubbles form and edges are dry. Flip and repeat.

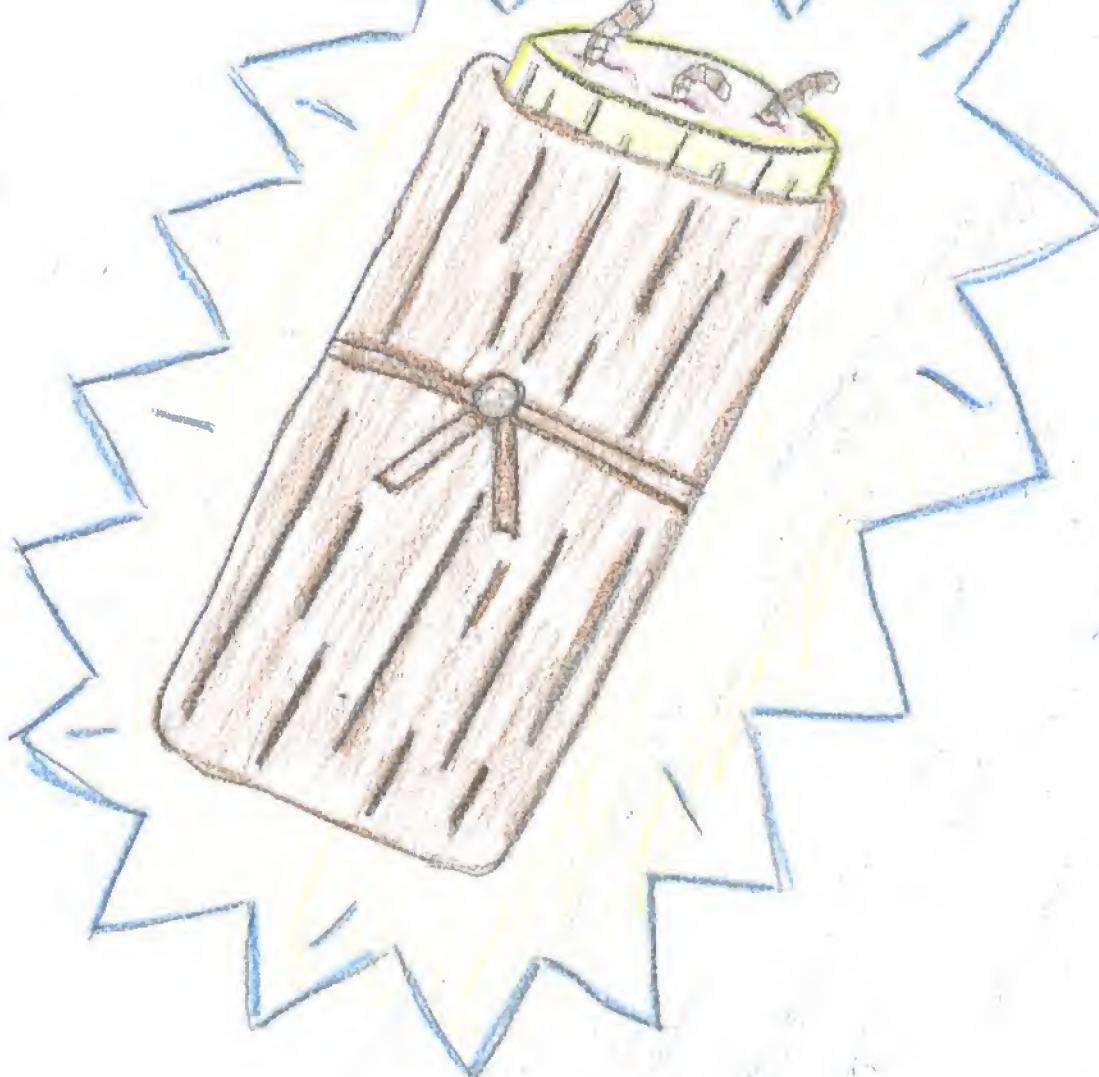


Dinner

Mealworm and Mole



Tamales



RECIPE:

Mealworm and Mole

Tamales

FROM:

Melanie Plascencia



INGREDIENTS:

2 cups of water

1 cup of Mealworms

6 dozen Corn Husks

10 pounds of dough

1 1/4 cups of Mole

DIRECTIONS:

Open the corn husk
and spread 7.2 pounds of dough
on it. Then put $\frac{1}{2}$ of mealworms
and some of the mole.

Keep doing this until
you have all the tamales
you need. For more
flavor, you can add

a teaspoon of salt
to them. Add 2 cups
of water to large
pot and preheat your
oven to 325° degrees
Close your tamales and
put them in the pot
from $4\frac{1}{2}$ to 6 hours.
When ready, serve
and enjoy.

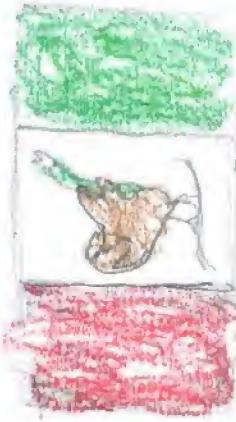




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RECIPE:

Tacos Dorados con mealworms

FROM:

Ch. Emiliano

**INGREDIENTS:**

8-10 Tortillas

Oil 1/3 cup

meal worms

cheese 1 1/2

1/2 cup Sour cream

2 Roma Tomatoes

4 cups Lettuce

1/3 cup red onion

DIRECTIONS:

First Put oil

in a large frying pan. Fry tacos

until golden and crispy for 1-3

minutes per side. Second you Put

mealworms in a different pan

and cook them. After that you Put

the mealworms in the crispy tortilla.

Third Put in different spices like

Lettuce, tomato, onion, hot sauce,
cheese, and sour cream.





RECIPE: Tacos

FROM: Edward Marruffo



INGREDIENTS:

1 tablespoon Chili Powder

1/2 teaspoon Salt

1/4 teaspoon Garlic Powder

1/2 cup tomato sauce

1 Pound ground beef (90/10)

1/2 teaspoon Cumin

1/2 teaspoon Dried Oregano

1/4 teaspoon Onion Powder

DIRECTIONS: Step 1 Heat Taco shell's

as directed on box. Step 2 In 10-inch

nonstick skillet cook beef over medium

high heat 5 to 7 minutes stirring frequently

until thoroughly cooked. Drain. Stir in

water and taco seasoning mix. Heat to

boiling. Reduce heat simmer uncovered 3 to 4

minutes, stirring frequently, until thickened.

Taco Worms



TACO Worms!



Delicious!

61.7K 103

RECIPE: Taco Worms

FROM: Aaron Torres



INGREDIENTS:

1tsp Smoked paprika
Mealworms
1/2 cup tomato sauce
Shredded cheese

Tortillas

1 tablespoon Chili Powder
1 pound Ground Beef
Silantro
1/2 teaspoon Salt

DIRECTIONS: Put a tortilla on a plate,

Then you place 1 pound of Ground Beef.

After place silantro near the Beef and put

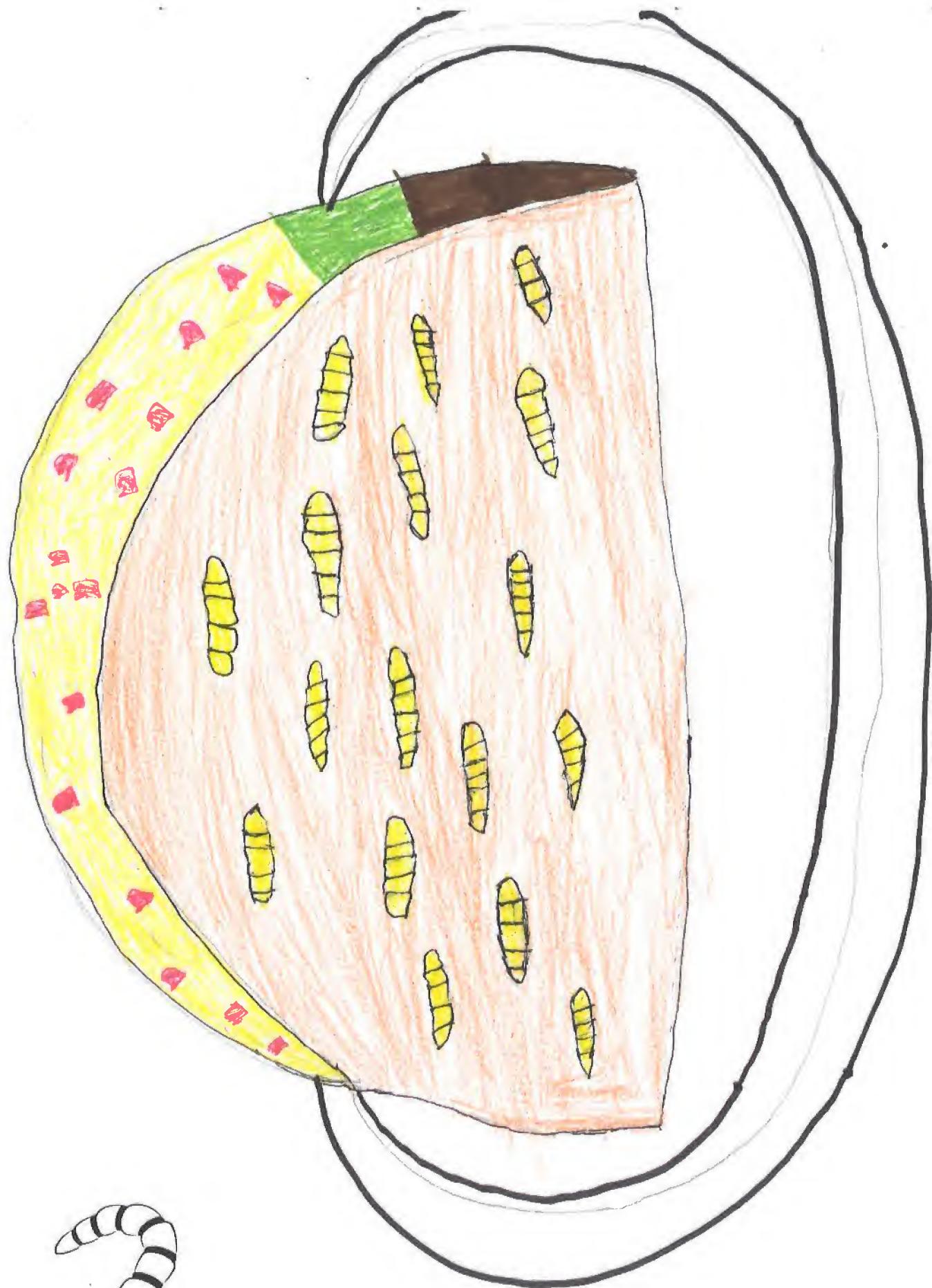
Some Mealworms inside the Beef. Next

you shred some cheese and 1tsp Smoked

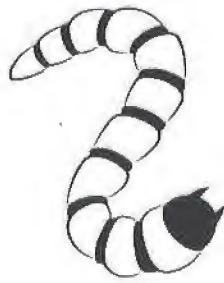
Paprika and 1/2 cup of tomato sauce. And

For the last touches, you add 1tablespoon of

Chili Powder and 1/2 teaspoon of salt.



Mealworm Taco



RECIPE:

Mealworm Taco

FROM:

Jorge Alfaro



INGREDIENTS:

onion, 1 teaspoon salt,

½ teaspoon cornstarch, ½

red pepper flake, ¼ teaspoon

dried oregano, 1 pound ground

2 teaspoons dried minced

1 teaspoon chili powder,

teaspoon ground cumin, ½ teaspoon

dried minced garlic, ¼ teaspoon

beef, ½ cup of mealworms.

DIRECTIONS:

First, get mix minced onions, salt, chili
powder, cornstarch, cumin, red pepper flakes, cayenne pepper, dried minced
garlic, and oregano in bowl. Second, heat a large skillet over
medium-high heat. Crumble ground beef into the hot skillet. Cook
and stir until the beef is completely browned, 7 to 10 minutes.
Drain and discard any excess grease. Third, return ground beef
to heat. Pour seasoning mixture and water over the beef; stir to
combine. Bring to a simmer and cook until the moisture absorbs into
the meat, about 5 minutes.

Meal talk



RECIPE:

Meal talk

FROM:

Isabella vigil



INGREDIENTS:

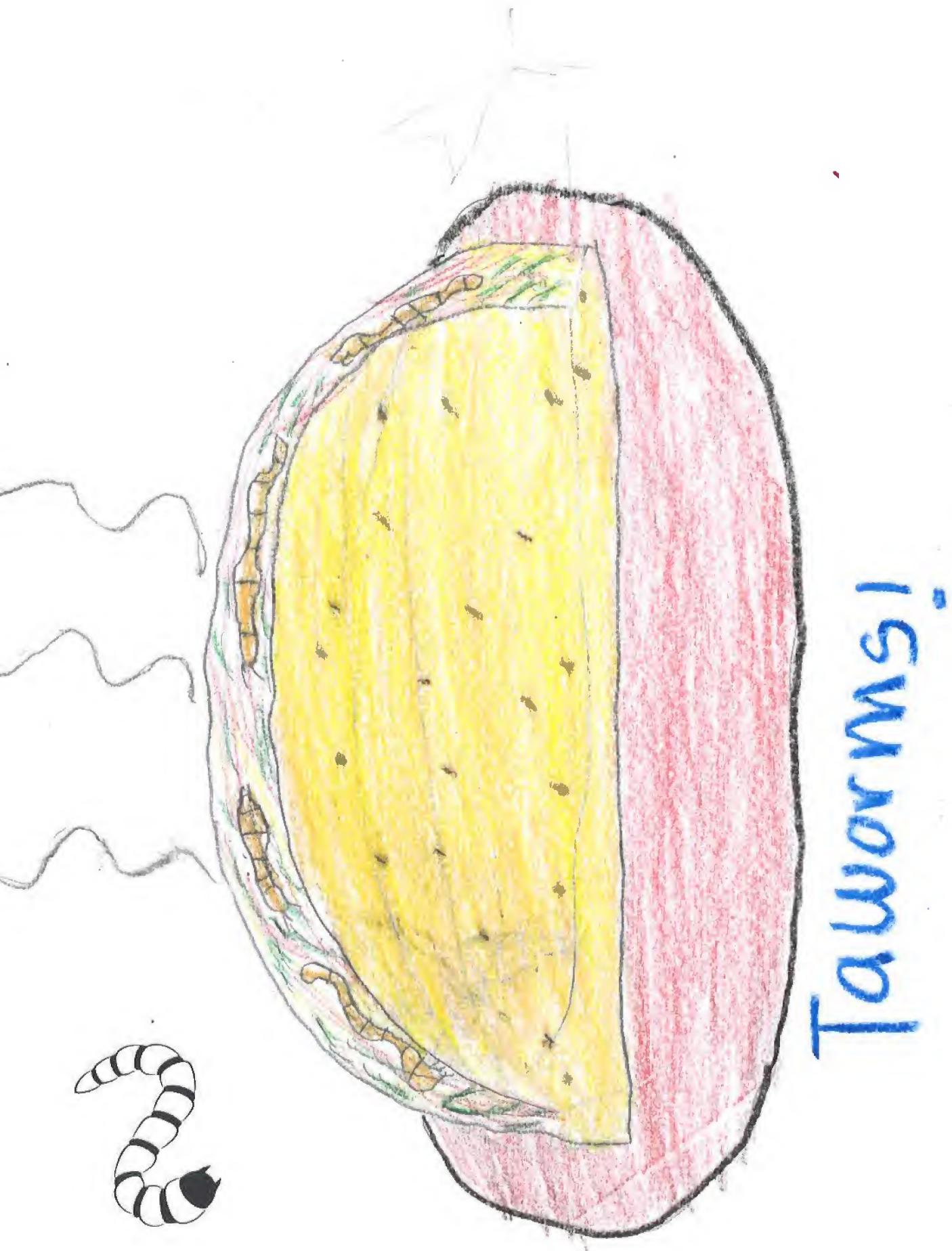
1 pound of ground beef	1 medium tomato chopped
1 cup old El Paso	1 cup shredded Cheddar
10 taco shells	cheese (4 ounces)
1/2 shredded lettuce	

DIRECTIONS:

1) Cook beef in 10-inch skillet over medium heat stirring occasionally, until brown; drain. 2) Stir salsa into beef. Heat to boiling, stirring constantly; reduce heat to medium-low. Cook 5 minutes, stirring occasionally. Pour beef mixture into large serving bowl.

3) Heat taco shells as directed
on package. Serve taco shells
with beef mixture, lettuce, tomato
and cheese.





TauroM9!

RECIPE: TaWorms

FROM: Valerie Uarez



INGREDIENTS:

1 Pound Lean (at Least 80%)

Ground Beef 1 cup old el

Pasotin Thick n chunky

Salsa 10 old el Pasotin

Taco shells 1/2 head lettuce,

Shredded 1 medium tomatoe,

Shredded (3/4 cup) 1

cup Shredded cheddar

cheese (4 ounces).

2 cups mealworms

DIRECTIONS:

Step 1 cook Beef in 10 inch

skillet over medium heat 8 to 10 minutes, stirring

occasionally, until brown; drain. Step 2 Heat taco

shells as directed on package. Serve taco

shells with Beef and the cup of mealworms

mixtuqe, lettuce, tomatoe and cheese.

:)

Sopas with mealworms



Mealworms



RECIPE: Sopes with mealworm 

FROM: Jamie Padilla

INGREDIENTS:

1. 1-1/2 cup of masa
2. 1-1/4 cup of warm water
3. 4 tablespoons of vegetable oil or lard
4. 2 cups of lettuce
5. 1/2 cup of mealworms

DIRECTIONS:

Mix masa harina
and warm water in a medium-size
bowl, knead the dough until you have a
uniform texture. If the dough feels dry,
add more water, little by little, spoon by spoon,
until the dough is soft and
manageable, like play dough. It doesn't
have to be sticky. Now, cover the dough

with a wet kitchen towel,
this will help to keep the
dough moist. Always keep a
small bowl of water next to
your working area to keep your hands
and dough moist. Divide the dough
into 10 pieces of the same size, cover
with the kitchen towel. Heat the
griddle over medium-high heat. To
form the tortillas, cut the plastic bag
into 2 squares of about 6-IN each.
Place one piece of plastic on the
Tortilla press, then put down one of
the small balls of dough and cover
with the other piece of plastic, close
the tortilla press and press down gently
with the tortilla press handle until



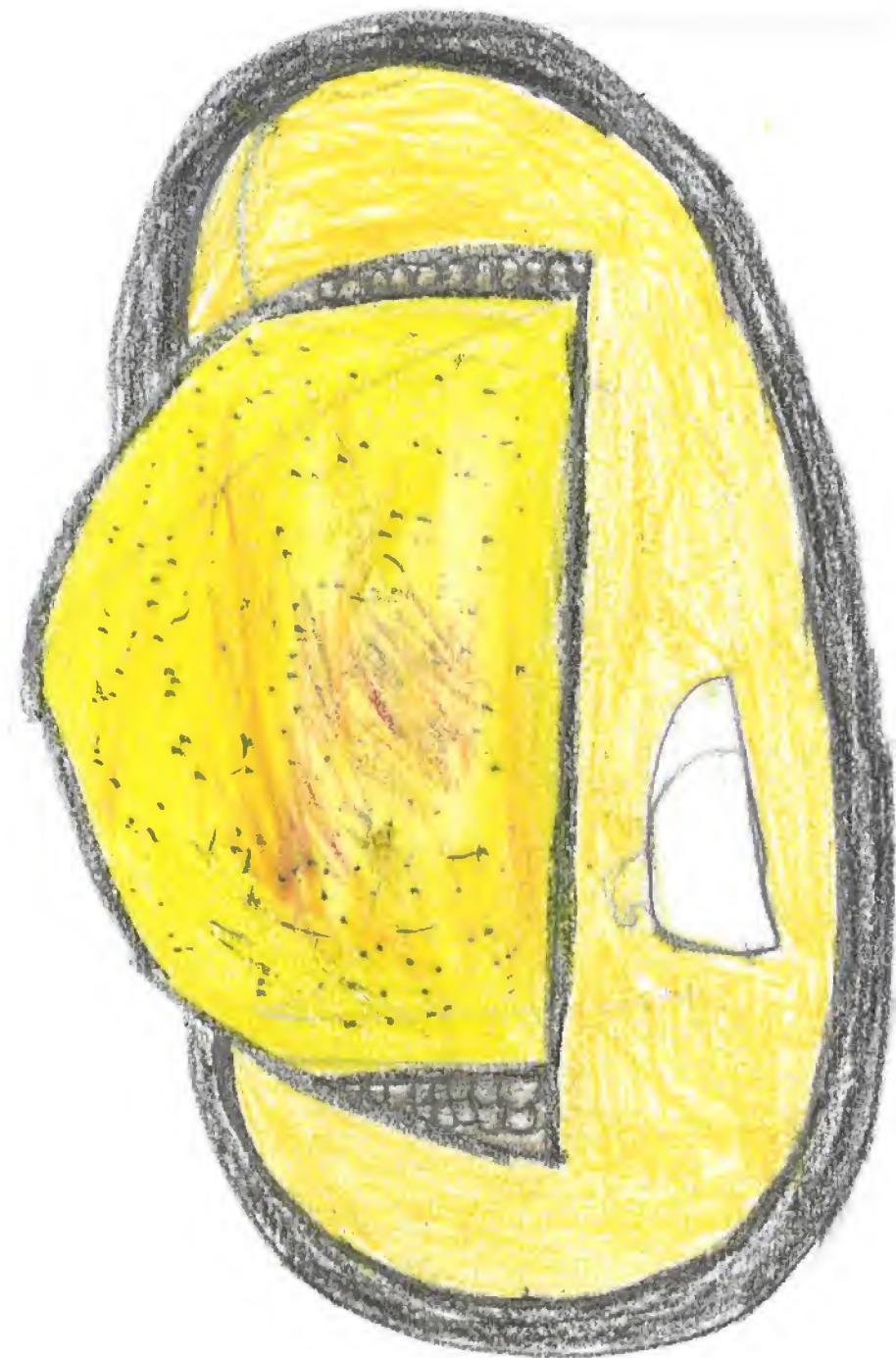
you form a medium size thick tortilla. Lift the handle and remove the top plastic. Pick up the tortilla, holding with the plastic at the bottom, gently flip the tortilla to unto the palm of your hand. A large part of the tortilla will cover your hand. (If you dont have a Tortilla press, use a glass pie dish to press down on the dough. Place the tortilla on the hot griddle/ comal, this is a fast but gentle move. Turn the tortilla after a minute, dont let it cook longer or the dough will dry and crack. Turn again after a minute, and the last cooking will take about 20-30 seconds.



Remove from griddle with the help of a spatula. Cover the tortilla with a dry kitchen towel and allow to cool for about 30-45 seconds, and start forming the border pinching the edges with your fingers. Now, the tortilla has become soft, cover again with the kitchen towel and keep cooking the rest of the softs.



Wormdilla



RECIPE: Wormdilla



FROM: Melani Garcia

INGREDIENTS:

4 flour tortillas
(8 inch), 2 Cups
Shredded Cheddar or
Monterey Jack
Cheese (2 cups = 8 oz)

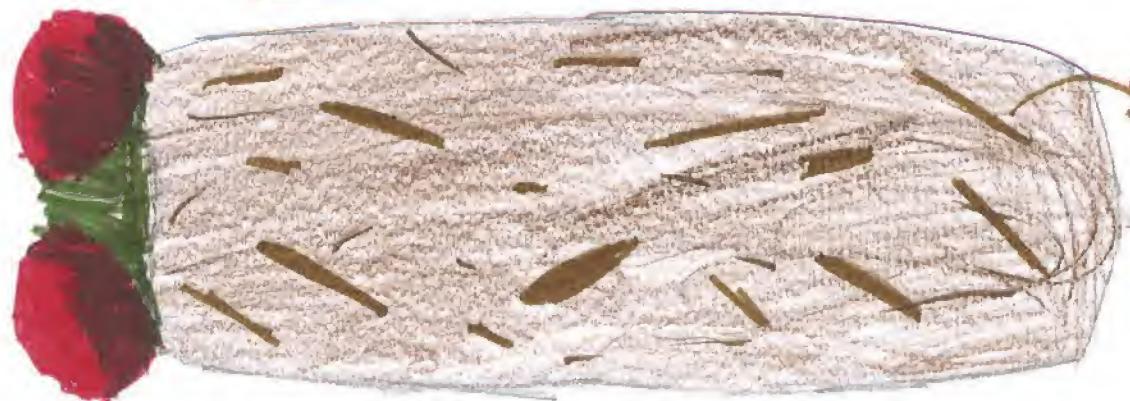
PAM Original No-
Stick Cooking Spray
Blue cheese dressing
optional, Meal worms

DIRECTIONS: Prepare Mealworms

Sprinkle half of one tortilla with 1/4 cup
Cheese. Top with 5 hot tenders and
another 1/4 cup cheese. Fold tortilla in
half over filling. Repeat with remaining
ingredients. Spray large skillet with
cooking spray; heat over medium heat.
Add each quesadilla and cook about 1
minute per side or until tortilla is golden brown
and cheese melts. Cut quesadillas into wedges. Serve
with blue dressing if desired.

Protein wrap w/ mealworms

\$5.99



mealworms

Strawberry-Peach

✓ Juice w/ reusable
Straw



mealworm
wrap



RECIPE: Mealworm Wrap

FROM: Crystal Solomon



INGREDIENTS:

2 cups of mealworms

2 cups of shredded romaine

Salt & Pepper

1 large tomato, diced

2 tbs. of lime juice

1/2 cup of avocado

DIRECTIONS:

Place mealworms in a large bowl and season with salt and pepper. Remove the skin and pit from the avocado and place in another bowl. Mash the avocado, then season with salt and pepper. Lay a tortilla on a work surface and spread 1/4 of the avocado mixture over the tortilla leaving a 1-inch border. Layer 1/4 of the lettuce down the center, followed by 1/4 of tomato. Add 3/4 of mealworms.

Crystal

Fold in the 2 sides of the tortilla,
then roll up like a burrito.



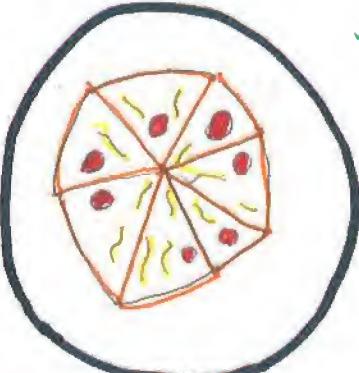
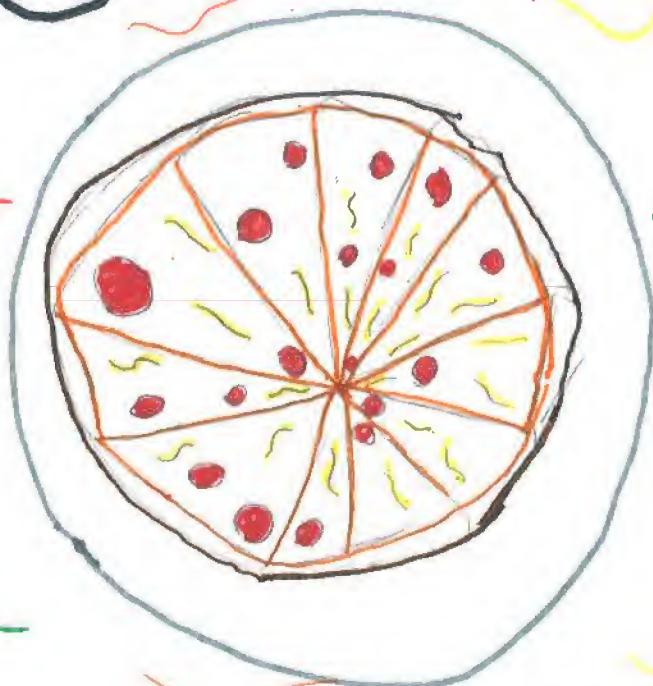
Repeat with the remaining ingredients
and tortilla.

Cut in half before serving.

Yum!!
Meat lover
Meat
Meat lover

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RECIPE: Meal worm pizza



FROM: Miranda Lopez

INGREDIENTS:

Dough

Souce

Cheese

meal worms

DIRECTIONS: The first step is
making dough. In a large bowl pour
yeast and sugar in water and leave it
for 5 minutes. Now add oil and salt
and stir in flour a cup at a time
until the dough forms. Now you can
put the dough on a cutting board or
a surface and roll it until its flat.

Miranda Lopez

The next step is to put the
dough in the oven and bake
at 400° for 25-30 minutes.

When it's done baking



Mealworm Pizza



RECIPE:

Mealworm Pizza

FROM:

JhimenA



INGREDIENTS:

1 1/2 Cups warmwater

1 teaspoon Sugar

2 teaspoon active dry

Yeast

Mealworms

DIRECTIONS:

7 Cups all-Purpose flour, plus more for dusting
6 tablespoons extra Virgin Olive oil, plus more
1 1/2 teaspoon Kosher Salt
1/4 Cup Semolina flour

Step 1 In a large mixing bowl, combine flours and salt. Step 2 In a small mixing bowl, stir together 200 grams (a little less than 1 cup) lukewarm tap water, the yeast and the olive oil, then pour it into flour mixture. Knead with your hands until well

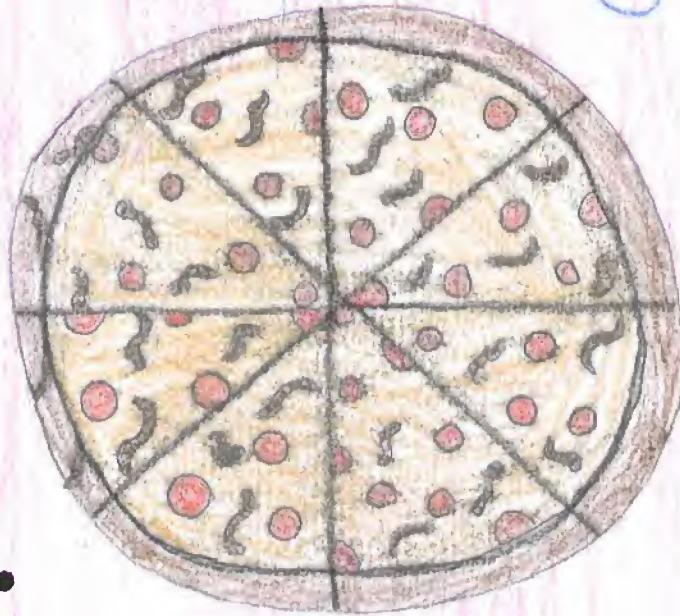
Jhimenga

Combined, approximately 3 minutes, then let the mixture rest for 15 minutes Step

3 Knead rested dough for 3 minutes. Cut into 2 equal pieces and shape



Pizza



Worm

RECIPE: Pizza Worm

FROM: Adriana Fernandez Martinez



INGREDIENTS:

1 1/2 cups of warm water (355ml)
water (105°F-115°F)

1 package of active dry yeast (2 1/4 teaspoons) of yeast

3 3/4 cups (490g) bread flour

2 1/2 tablespoons olive oil (omit if cooking pizza in a wood-fire pizza oven)

2 teaspoons salt

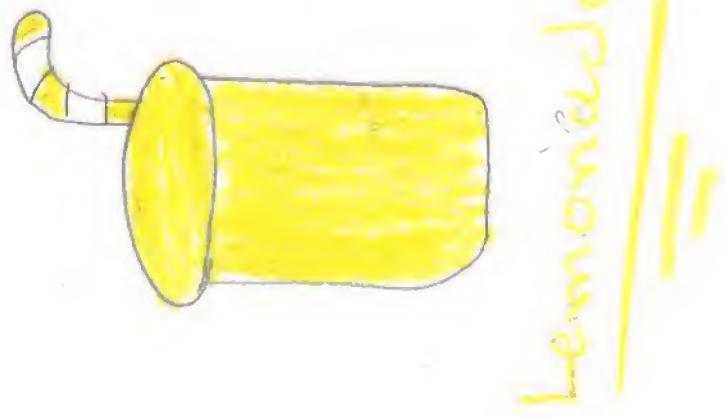
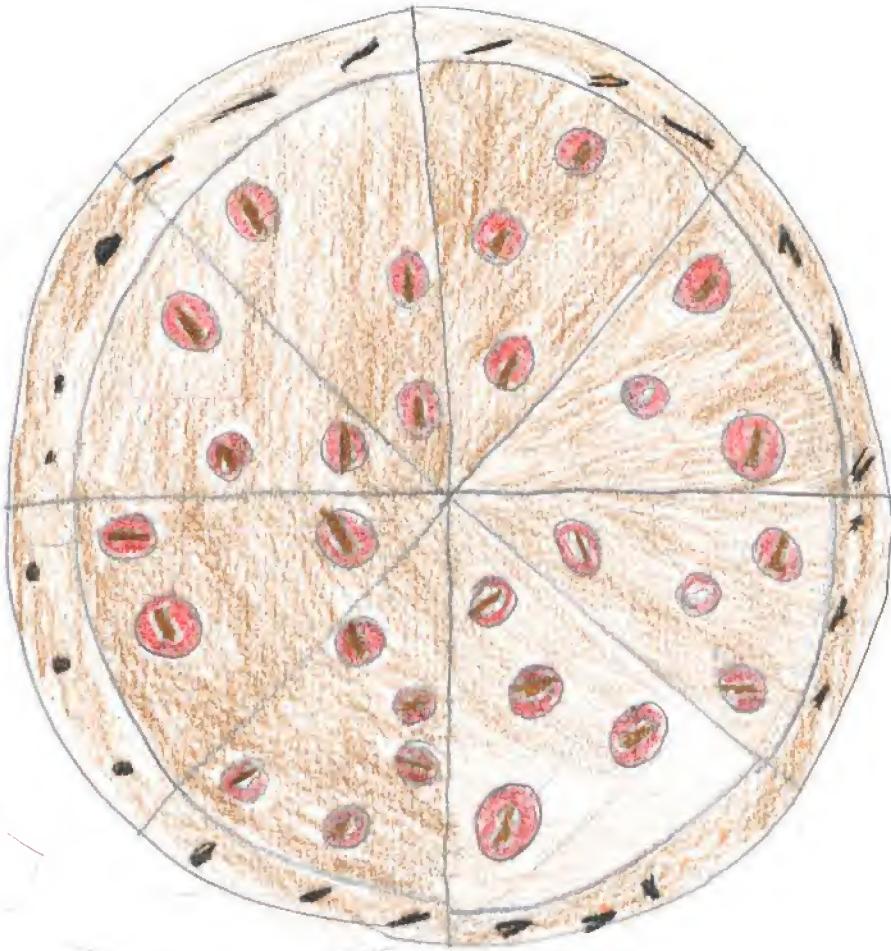
1 teaspoon sugar

2 1/2 cups of mealworm

DIRECTIONS: First, Preheat the oven to 375

degrees F (190 Degrees C). Second, Place the pizza halves cut side up onto a baking sheet. Spoon some of the pizza sauce onto each one. Top with mozzarella cheese and pepperoni slices. Last bake for 10 min in the preheated oven, or until the cheese is melted and browned on the edges.

Pizza
Worm



RECIPE: Pizza Mealworm

FROM: Alejandra Zamora



INGREDIENTS: 1 oz Black Garlic

1 pinch (chopped) Parsley 1 oz Olive Tapenade

2 TSP Grated Parmesan cheese 4 drops of Texas oil

1 tsp Puff pastry 1/2 TBSP Goat Cheese

1 TSP ground roasted mealworms 1 pinch of Mealworms

DIRECTIONS: You will need 1 pinch

of chopped parsley, 2 TSP of Grated
Parmesan Cheese, 1 tsp puff pastry,

1 TSP of ground roasted mealworms,

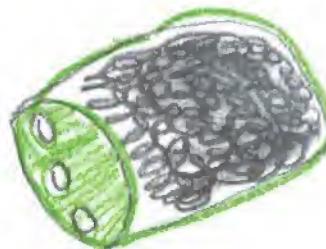
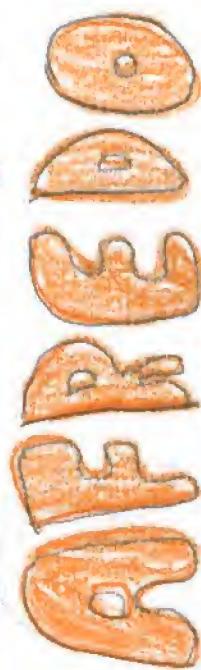
1 oz Black Garlic and Olive Tapenade,

4 drops of Texas Olive oil, 1/2 TBSP

Goat Cheese, 3 in Texas Olives cut half

and at last 1 pinch of mealworms.

W E A L T H Y R U M



RECIPE: Mealworm Alfredo

FROM: Alexa Gómez



INGREDIENTS:

choice Italia fusilloni

spoon, olive oil,

breasts, 3 table

butter, black pepper,

2 1/2 tablespoons

1(17.6-ounce) Sams

pasta. 1 table

2 boneless chicken

spoons unsalted

3 garlic cloves, minced,

all-purpose flour.

DIRECTIONS:

Get a large pot of
lightly salted water to a boil. Add
fettuccini and cook for 8-10 minutes.
Melt 2 tablespoons butter in large
skillet over medium heat, then in a
large saucepan combine ricotta
cheese, cream, salt, Parmesan cheese and
remaining butter. Heat chicken, and

then add pepper. then stir

alfredo sauce in the chicken.

then add 1 cup of fettucine.

Also then you add 2 cups of
mealworms. Last you sprinkle cheese
and enjoy your Mealworm Alfredo.



Mealworm



Salad

Carrots
Tomatoes

Lettuce

mealworms



RECIPE: Mealworm Salad

FROM: Darlene Leon



INGREDIENTS:

Lettuce

Tomatoes

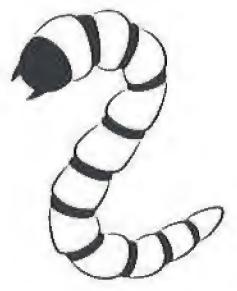
Carrots

Mealworms

DIRECTIONS: Wash vegetables. Cut lettuce, tomatoes and carrots then add the vegetables to your bowl. You can add as many vegetables as you want. Put mealworms in a plastic bag and put them in the freezer for about 15 minutes (this will kill the mealworms). Then spread the mealworms evenly on a non stick cookie sheet (if you are worried that the

mealworms are going to stick then you can lightly grease the sheet). Roast them in the oven for 10-15 minutes on 90: until they light and crispy. Be careful mealworms can burn easily. Take mealworms off the oven and spread them on a new baking sheet till they cool down then add them to your salad.





Mealworm Soup



RECIPE: Mealworm Soup



FROM: Isabella Chavez

INGREDIENTS:

Mealworms 60

Olive oil 2 Tbsp

Carrots 10

peper 1/4

Celery 7

Onions 1

Potatoes 6

Tomatoes 2

Salt 1/2

DIRECTIONS: Heat olive oil in a pot

then add onions, carrots, celery and

tomatoes. Then boil it for 4 minutes

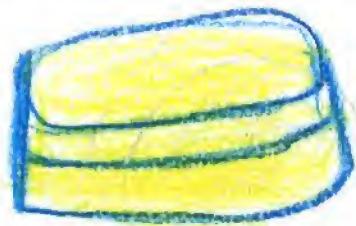
after add you're mealworms. After

you have put your soup in you're

bowl add salt and go ahead and

eat you're mealworm soup.

Muri to



RECIPE: Murito



FROM: Fernando Ambriz

INGREDIENTS:

7 cups of maseca

a comal

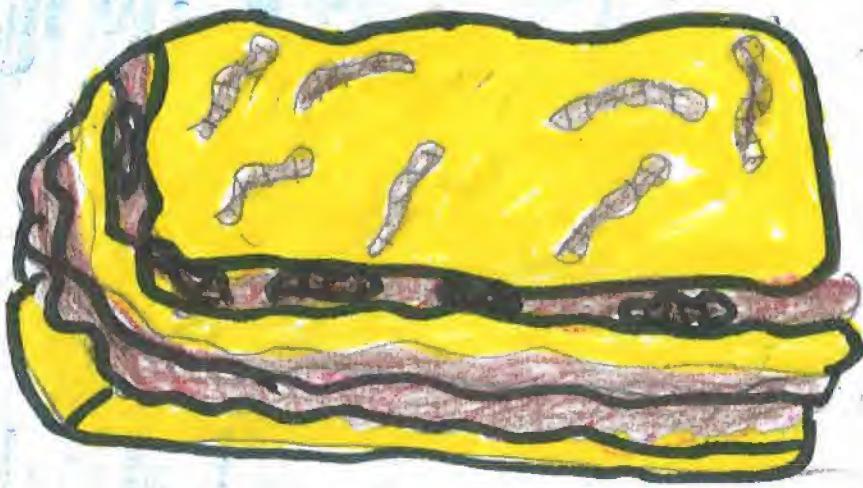
1/2 cup of water

bowl

1 pound of mealworms

1/2 a bowl 1 spoon of salt

DIRECTIONS: First you have to get maseca and then you pour it into a bowl.
Then you stir with your hands then you turn on the stove with a comal. Then, you make a ball of masa and you form it with your hands. Then you put it into the comal then you warm up the mealworms then you make the murito.



WORMSAGNA

RECIPE:

Mealworm Lasagna

FROM:

Diego Godinez



INGREDIENTS:

$\frac{3}{4}$ pounds of tomato paste

15 lasagna noodles

1 pound of ground beef

4 $\frac{3}{4}$ cups of grated Mozzarella cheese

Dry mealworms

DIRECTIONS:

Cook Pasta

on boiling water. Drain the pasta when it is done.

Cook ground beef. Stir

the tomato paste with the

ground beef. Layer the pasta

ground beef and mealworms.

Layer it 3 times.

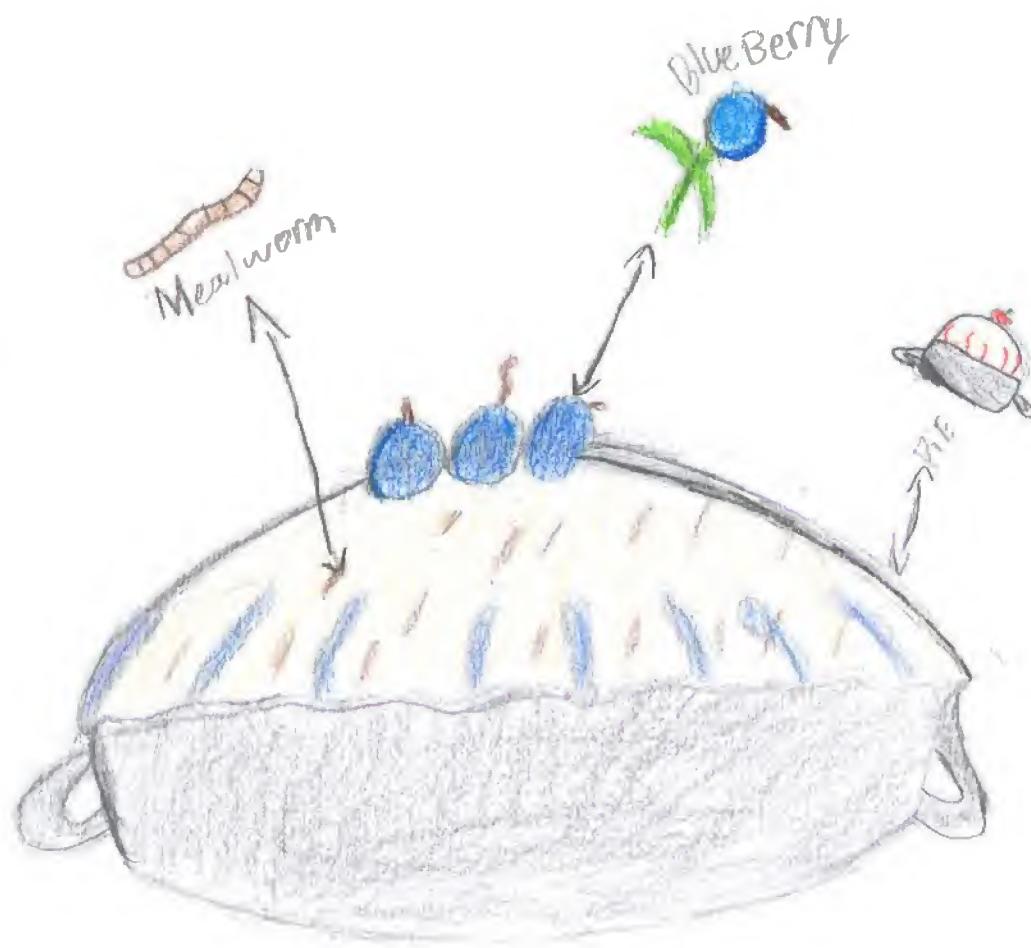
Put the lasagna in your oven at 375°F for 45 minutes. Then take out the lasagna and sprinkle mealworms on the top and enjoy.





Dessert

Pedro
Cruz



Melworm pie

RECIPE: Mealworm pie



FROM: Pedro Cruz

INGREDIENTS:

Dough, blueberry's

blueberry : Jam

mealworms, and a

dawn

DIRECTIONS: First get the pan and

fill the bottom of the pan with dough.

Then fill it with Jam. Next cover the

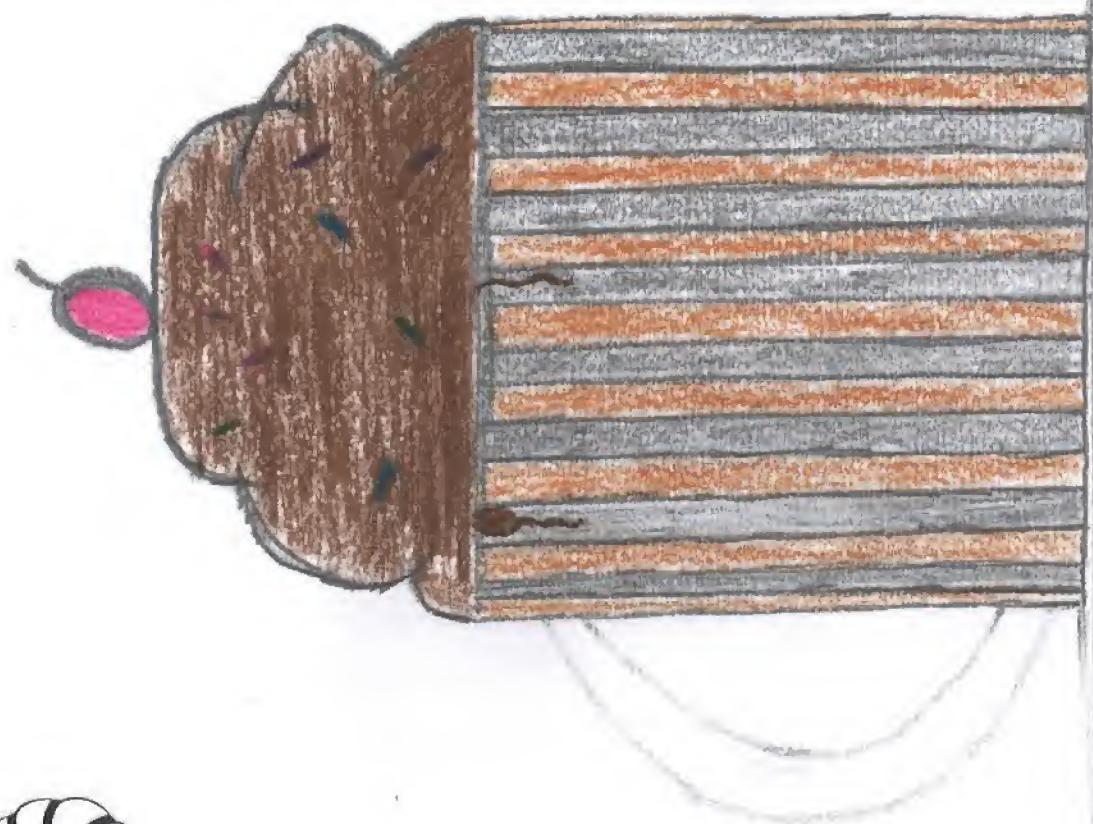
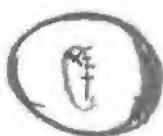
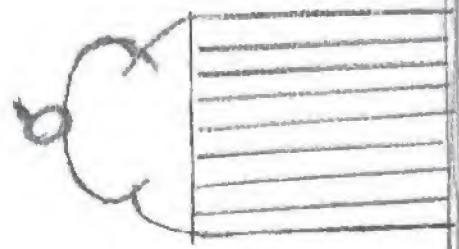
top with dough and bake it on

the oven. Next dising it with

blue berry's and your done



Mealworm ice cream



RECIPE: Meal worm Ice Cream

FROM: Rigoberto Corballo



INGREDIENTS:

- Cup holder
- Sugar / milk / cream mixture (2 cups)
- Whipped cream (1 cup)

- Vanilla Extract (2 1/2)
- Fudge (chocolate)
- Ice cream mixture
- Salt (2 teaspoons)
- Almond milk

DIRECTIONS:

Stir sugar, and rest of the ingredients. Heat just mix is hot.
Transfer mixture to measuring cup. Stir in Vanilla Extract and chill mix throughly. Put cold ice cream mix into ice cream maker. When ice cream is softly frozen, serve immediately or place plastic wrap to open 2-3 hours.



Crepe Worm!

RECIPE: Crepe worm

FROM: Ana Valeria Reveles



INGREDIENTS:

1 cup all Purpose flour

1 1/2 cups milk

1 tablespoon sugar

2 eggs

1/2 teaspoon ground

1 tablespoon butter

cinnamon

2 cups sliced Strawberries

2 firm bananas, sliced

DIRECTIONS:

first step in a mixing bowl

combine flour, sugar, cinnamon, milk and eggs

mix well, cover and refrigerate for 1 hour

second step melt 1 teaspoon of butter, stir

batter Pour about 2 tablespoon into the center

of skillet cook 15-20 seconds longer remove

to a wire rack Third step spread 2 rounded

sabrespoonsfuls on each crepe Roll up combine Topping

Bon Appétit !!



Beverages

mealWoracmMeada



RECIPE: MealWormNeada

FROM: Annette G. Morelos



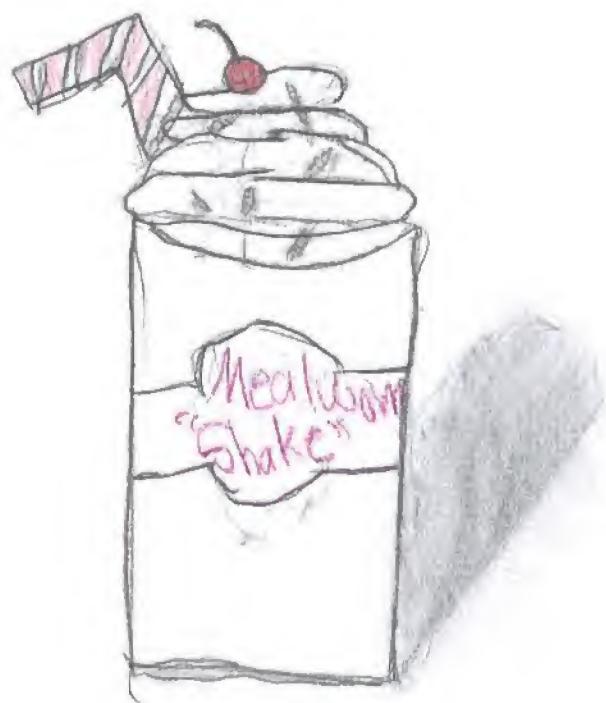
INGREDIENTS:

<u>2 cups mangoes-frozen</u>	
<u>1 1/2 cups mango nectar</u>	<u>2 cups of ice cubes</u>
<u>1 mango, peeled and diced</u>	<u>1 lime</u>
<u>4 tablespoons chamoy</u>	<u>2 teaspoons tajin</u>
<u>4 teaspoons mealworms</u>	

DIRECTIONS:

1. Place frozen mango, mango nectar, and ice into a blender and blend until smooth.
2. Juice half of a lime.
3. Add 1-2 tablespoons of chamoy.
4. Add 1 teaspoon of tajin.
5. Add a tamarindo stick
6. Now add extra topping (by choice)

Italia Alcant



RECIPE:

Strawberry Milkshake

FROM:

Italia Alvarez



INGREDIENTS:

½ cups of ice cream

½ cup of milk

¼ cups of blended

Mix-ins (fruit)

Mealworms

A blender

1 tablespoon of

Strawberry preserve

DIRECTIONS:

Combine the ingredients. Pour the milk first.

If the ice cream is hard before you scoop it, then add more

milk. ½ cup of frozen strawberries.

Pour 1 tablespoon of strawberry preserves. Add the rest of your

adding. Blend it all. Enjoy!